REMARKS

Summary of the Application

Claims 1-12 and 15-34 are currently pending, with claim 1 being amended to more distinctly point out the subject matter Applicants regard as their invention. As the amendment is supported throughout the application as filed, e.g., at page 6, no new matter has been introduced into the application by way of this amendment.

Summary of the Final Office Action

The final Office Action dated August 7, 2006, rejects claims 1, 4-6, 17 and 22 under 35 U.S.C. § 102(e) as being anticipated by U.S. Published Patent Application 2002/0098288 ("Kamitani").

Claims 7, 8, 10 and 23-25 are rejected under 35 U.S.C. § 103(a) as being obvious over Kamitani.

Claims 3, 16 and 19 are rejected under 35 U.S.C. § 103(a) as being obvious over Kamitani in view of U.S. Patent 5,380,612 ("Kojima et al.").

Claim 21 is rejected under 35 U.S.C. § 103(a) as being obvious over Kamitani in view of Kojima et al.

Claims 9 and 26-28 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of U.S. Patent 6,007,240 ("Price").

Claims 2, 12, 30 and 32 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of WO99/21715 ("McCullough et al.").

Claim 34 is rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of McCullough et al.

Claims 11, 15, 18, 29 and 31 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of McCullough et al. and further in view of Kojima et al.

Claims 20 and 33 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of McCullough et al. and further in view of Kojima et al.

Discussion

As currently pending, claim 1 describes a method of making a heat-sensitive lithographic printing plate precursor comprising the steps of:

(i) providing a web of a lithographic support having a hydrophilic surface;

(ii) applying a coating comprising a phenolic resin on the hydrophilic surface of the web;

(iii) drying the coating;

(iv) heating the web wherein the temperature of the web is maintained above 150°C during a period of between 1 and 30 seconds; and

(v) winding the precursor on a core or cutting the precursor into sheets.

The Office Action alleges that Kamitani discloses each of the claimed steps, including the heating step. The latter is said to be disclosed in Table 1, third example from the bottom, wherein the "exit surface temperature (°C)" of the combined support and photosensitive coating layer after 5 seconds of heating time in an infrared heating device set at 600°C is said to be 153°C.

One skilled in the art reading this example, however, would conclude that it does not anticipate the pending method claims.

The example provides the "exit surface temperature" of the sample, *i.e.*, the temperature of the surface of the sample as it exits the heating device after being exposed to 600°C for 5 seconds. As the sample entered the heating device at room temperature (25°C), and traveled through the device (set at 600°C) for 5 seconds, one skilled in the art, assuming a linear temperature increase over time, would understand this to disclose a temperature/time increase of about 25.6°C/sec (i.e., 153°C-25°C/5 secs). Using this temperature/time relationship, one skilled in the art would then conclude that a surface temperature of 150°C would not be reached until the sample was on the cusp of exiting the heating device—indeed, the period of time the sample would have a surface temperature of at least 150°C would be well under 1 second, i.e., about 0.15 secs. This, of course, is far from that required by the

pending claims, all of which require, *inter alia*, heating the web wherein the temperature of the web is maintained above 150°C during a period of between 1 and 30 seconds.

For this reason, it is respectfully requested that the anticipation rejection of claims 1, 4-6, 17 and 22 be withdrawn.

Moreover, and as explained above, and setting aside the other deficiencies in Kamitani, Kamitani fails to motivate one skilled in the art to modify the Kamitani process so it comprises heating the web wherein the temperature of the web is maintained above 150°C during a period of between 1 and 30 seconds.

Indeed, Kamitani's teaching is clear—heating a precursor in the manner of the claimed invention provides unacceptable results. For example, Table 1 itself clearly describes the plate whose exit surface temperature is 153°C has developability and overall quality of "x," i.e., "did not measure up to quality stipulated by quality standards (unsatisfactory quality)." These same problems were experienced for a plate whose exist surface temperature was 145°C. *See ¶ [0083] & Table 1 (third entry from bottom and first entry, respectively).* This data would discourage one skilled in the art from heating a plate to a temperature approaching even 145°C—a temperature below that contemplated by the claims. Indeed, other portions of Kamitani confirm this teaching—that thermal type digital direct plates must have a final temperature of 125°C to 145°C, and preferably from 103°C to 140°C, and that final temperature reached by the photosensitive layer of photopolymer type digital direct plates must be 100°C to 135°C, and preferably 105°C to 130°C. *See, e.g., ¶[0025].* The Examiner's argument that in ¶[0025] only final temperatures are taught and that the heated temperatures applied prior to the final temperature may be higher is not at all consistent with the inventive examples and teaching provided in Table 1 of Kamitani (*see supra).*

For at least these reasons, the obviousness rejection of claims 7, 8, 10 and 23-25 should be withdrawn.

Further, none of the secondary references identified in the Office Action provide the teaching absent in Kamitani that is necessary to motivate one skilled in the art to provide the method as claimed.

For example, Kojima et al. is used in the Office Action to purportedly teach the equivalence of hot air and infrared heaters (in its rejection of claims 3, 16 and 19) and, with Kamitani, the claimed average cooling rate (in its rejection of claim 21). However, Applicants disagree that these references are properly combinable. This is because the Kojima et al. photosensitive plates comprising a photoconductive layer and a photosolubilizable compound which can be heat-treated *after exposure* are completely different than the Kamitani heat-sensitive printing plates which are heated *prior to* exposure. The Office Action improperly disregards these critical differences—differences which would cause one skilled in the art to avoid using any teaching from Kojima et al. in addressing an alleged problem in a Kamitani-type plate. Further, and as mentioned in the prior response, Kojima et al. does not teach the equivalence of any of the heat sources listed therein. As the Office Action fails to fully explain why one skilled in the art would overlook these differences and use the teachings from Kojima et al. in Kamitani, and further fails to explain how Kojima et al. overcomes the previously-identified deficiency of Kamitani regarding the heating step, Applicants respectfully submit that the obviousness rejections of claims 3, 16, 19 and 21 should be withdrawn.

By way of further example, Price is alleged in the Office Action to teach the result of cooling effects on polymers. Applicants again contest the assertion in the Office Action that this reference is combinable with Kamitani. Price is not related at all to the printing plate field, teaching instead that thermal expansion of polyvinyl chloride ("PVC") is unaffected by the direction of the temperature change except in the T_g region. There is no relation between (1) this teaching and (2) printing plates which do not comprise PVC, and which include a coating composition which comprises several components including a phenolic resin. Applicants thus submit that the rejection of claims 9 and 26-28 should be withdrawn on this basis alone. Moreover, as the teaching of Price alleged in the Office Action does not address the previously-identified deficiencies of Kamitani, *e.g.*, the heating step, the rejection of claims 9 and 26-28 should be withdrawn on this basis as well.

A third secondary reference, McCullough et al. (discussed in the background section of the application), is used by the Office Action in combination with Kamitani in rejecting claims 2, 12, 30 and 32 as obvious. In entering this rejection, the Office Action states that "Kamitani does not specifically teach 'wherein during the heating step the web temperature is

maintained above 170°C during a period of between 1 and 30 seconds.'" The Office Action continues, noting that Kamitani

> does suggest the ability to vary the temperature and time conditions in order to achieve desired results (see, for example, Table 1 and Table 2). McCullough et al. teach a method of heating a printing plate precursor (abstract). Further, McCullough et al. teach the desire and ability to vary, by trial and error, the time and temperature settings to achieve desired sensitivity in the printing plate precursors (page 7, lines 23-24 and lines 33-34). McCullough et al. also teach that when the printing plate precursors are heated to a higher temperature, the precursors should be held at that temperature for a shorter time (see the sentence bridging pages 7 and 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to maintain the temperature of the precursors above 170°C for a period of between 1 and 30 seconds in order to achieve a desired sensitivity.

See Office Action, pp. 7-8.

Applicants, at the outset, respectfully disagree that these references are properly combinable.

Kamitani, in relation to the exit temperature of the plates (as set forth in its Tables), does not teach that a higher set temperature requires a shorter heating time. Indeed, the teaching in this regard that one skilled in the art would derive from Kamitani, if any, is that a shorter holding time provides a plate with a lower exit temperature, and a higher set temperature provides a plate with higher exit temperature. This is clear from the variables presented in the Tables, e.g., a single set time is combined with variations in holding times, with shorter holding times providing lower exit temperatures.

Further, the Office Action alleges that McCullough et al. suggests, although favoring a maximum temperature of 90°C, that much higher temperatures are possible. However, on page 7 lines 17-21. McCullough et al. states:

> *As regards the upper limit, we believe that at too high a temperature the time for which the heat treatment should be carried out in order to obtain a desired level and stability of sensitivity is likely to be overly critical, ...*

This passage teaches one skilled in the art to *not* use high temperatures, and as such certainly does not support the allegation in the Office Action that higher temperatures are desirable or even possible. On the contrary, this passage suggests *not* to apply high temperatures, and clearly teaches away from using high temperatures. Indeed, the full

context of this passage teaches one that a maximum temperature of 50°C is preferred for the heat treatment, and as a general guide a maximum of 90°C, and most preferably not in excess of 60°C. Thus, one skilled in the art would conclude from reading the entirety of McCullough et al. that "high temperatures" mean temperatures in the range between 50°C and 90°C—these temperatures being far below that recited in the pending claims.

Although the Office Action asserts that one skilled in the art can use trial-and-error to achieve an appropriate temperature, this ignores the actual teaching set forth in the reference which must bracket any alleged trial-and-error approach. This teaching is that the temperature should not exceed 90°C. Taken as a whole and in context, McCullough et al. provides no suggestion whatsoever that would motivate one skilled in the art to use a temperature of almost double the maximum (90°C) set forth in McCullough et al.

In addition, the Office Action asserts that McCullough et al.'s teaching that the lower the temperature the longer the time, also implicitly teaches the opposite (higher temperature and a shorter time), is not supportable. Indeed, the sentence in McCullough et al. which follows is to the contrary, stating that: "*in all cases we favour carrying out the heat treatment for at least 4 hours, and preferably for at least 24 hours and most preferably for at least 48 hours, especially in the case of the lower temperatures.*" Thus, the minimum heating time taught by McCullough et al. is *4 hours*, which is far and away distinct from the claimed *1 to 30 seconds*. In short, there is no teaching in McCullough et al. which would motivate one to modify the method of Kamitani to heat the web wherein the temperature of the web is maintained above 150°C during a period of between 1 and 30 seconds.

For these reasons, those claims rejected as obvious over the asserted combination of at least Kamitani and McCullough et al. are patentable over the cited prior art. Accordingly, the obviousness rejections of claims 2, 12, 30, 32; 11, 15, 18, 29 and 31; and 20 and 33, should be withdrawn.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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